**DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

# WELDING INSPECTION REPORT

**Resident Engineer:** Pursell, Gary
**Address:** 333 Burma Road
**City:** Oakland, CA 94607

**Report No:** WIR-016290
**Date Inspected:** 06-Aug-2010

**Project Name:** SAS Superstructure
**Prime Contractor:** American Bridge/Fluor Enterprises, a JV
**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

**OSM Arrival Time:** 1900
**OSM Departure Time:** 700
**Location:** Shanghai, China

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| **CWI Name:** | See Below | | | **CWI Present:** | ☑ Yes | ☐ No | |
| **Inspected CWI report:** | ☐ Yes | ☑ No | ☐ N/A | **Rod Oven in Use:** | ☑ Yes | ☐ No | ☐ N/A |
| **Electrode to specification:** | ☑ Yes | ☐ No | ☐ N/A | **Weld Procedures Followed:** | ☑ Yes | ☐ No | ☐ N/A |
| **Qualified Welders:** | ☑ Yes | ☐ No | ☐ N/A | **Verified Joint Fit-up:** | ☐ Yes | ☑ No | ☐ N/A |
| **Approved Drawings:** | ☑ Yes | ☐ No | ☐ N/A | **Approved WPS:** | ☑ Yes | ☐ No | ☐ N/A |
| | | | | **Delayed / Cancelled:** | ☐ Yes | ☑ No | ☐ N/A |

**Bridge No:** 34-0006
**Component:** OBG

**Summary of Items Observed:**
CWI Inspector: Mr. Liu Hua Jie

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

OBG Segment Trial Assembly

This QA Inspector observed ZPMC welder Mr. Zhang Qiu Jun stencil 057333 used shielded metal arc welding procedure specification WPS-B-P-2214-B-U2-FCM-1 to complete butt weld SP162-001-050 through SP162-001-054. These welds join OBG segment 9DW to 9EW side plate “T” stiffeners near panel point PP082. This QA Inspector observed a welding current of approximately 150 amps and the base material had been preheated with a torch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Xu Nai Jun stencil 044551 used shielded metal arc welding procedure specification WPS-B-P-2213-B-U2-FCM-1 to complete butt welds SP162-001-044 through SP162-001-048. These welds join OBG segment 9DW to 9EW side plate “T” stiffeners near panel point PP082. This QA Inspector observed a welding current of approximately 160 amps and the base material had been preheated with a torch. Items observed on this date appeared to generally comply with applicable contract

documents.

This QA Inspector observed ZPMC welder Mr. Chen Rui stencil 041713 used shielded metal arc welding procedure specification WPS-345-FCAW-2G(2F)-Repair and WPS-345-FCAW-3G(3F)-Repair to complete repair welds of side plate SP731-001 welds -28 through -36 which had been visually rejected. These welds are located in OBG segment 9CW between panel points PP79 and PP80. This QA Inspector observed a welding current of 170 amps and the base material had been preheated with a torch. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zang Yanbo, stencil 045196 used shielded metal arc welding procedure WPS-B-P-2214-TC-U4b-FCM-1 to make weld SEG051-006. This weld is located on a longitudinal diaphragm near the counterweigh side of OBG panel point 76. This QA Inspector measured a welding current of approximately 170 amps and Mr. Zang Yanbo appeared to be certified to make this weld. This QA Inspector observed the welding electrodes were stored in a heated portable electrode storage container. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zang Yanbo, stencil 045196 performed shielded metal arc repair welding of OBG segment 9CW “T” stiffener hold back weld BP145-039. After Mr. Zang Yanbo completed using one shielded metal electrode this QA Inspector observed ZPMC appeared to have removed the entire fillet weld and gouged the base material up to a depth of 5mm for a length of approximately 200 mm. ZPMC QC personnel informed this QA Inspector that ZPMC Magnetic Particle (MT) personnel had identified rejectable indications in this location and the weld was ground to remove the indication. This fillet weld located at OBG segment 9CW bottom plate “T” Rib stiffener. This QA Inspector asked ZPMC CWI Mr. Liu Hua Jie if ZPMC has obtained Engineering approval to perform base material repairs as required by AWS D1.5 2002. Mr. Liu Hua Jie informed this QA Inspector that ZPMC has not submitted any repair documents. This QA Inspector informed Mr. Liu Hua Jie that an incident report will be issued to document ZPMC performing base metal weld repairs without Engineering approval See the photographs below for additional information. Items observed on this date do not appear to fully comply with applicable contract documents.

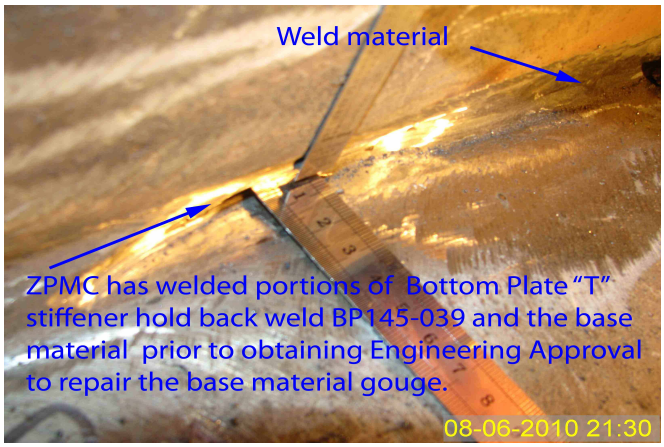
This QA Inspector observed ZPMC welder Mr. Li Shuqiang, stencil 053609 and welder Mr. Xin Ming, stencil 053742 have used flux cored welding procedures WPS-B-T-2233 and WPS-B-T-2234 to make cross beam CB12, SP209-012 stiffener plate hold back welds. These fillet welds are located in OBG cross beam CB12. This QA observed ZPMC QC Inspector Mr. Wang Li Yang had recorded a welding current of 212 amps and 25 volts. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Si Gao Feng, stencil 204342 has used flux cored welding procedures WPS-B-T-2232 to make cross beam CB12, SP209-012 stiffener plate hold back welds. These fillet welds are located in OBG cross beam CB12. This QA observed ZPMC QC Inspector Mr. Wang Li Yang had recorded a welding current of 305 amps and 30 volts. Items observed on this date appeared to generally comply with applicable contract documents.

# WELDING INSPECTION REPORT

*( Continued Page 3 of 3 )*






**Summary of Conversations:**

See Above.

**Comments**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

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| **Inspected By:** | Dawson,Paul | Quality Assurance Inspector |
| **Reviewed By:** | Carreon,Albert | QA Reviewer |